CAANDIA'S
UNREMEMBERED EXPLORERS
Laying the foundations for the nation's early economic development, the Geological Survey of Canada has recorded the geography, geology and life of this land
BY WYNNE THOMAS

They were an odd bunch, those unremembered explorers who set out to draw the map of Canada more than a century ago: William Logan, part British soft, part expert woodman, a brilliant self-taught geologist; Alfred Selwyn, a pockmarked beanpole of a man, aloof, sarcastic, dubbed by his subordinates "The Prince of Liars"; George Dawson, a short hunchbacked figure with weak lungs but the brain of an intellectual giant; Robert Bell, medical doctor, engineer, taxidermist, photographer, map maker and astronaut, a man with a marked and well-exercised taste for political intrigue.

Yet these unlikely successors to Champlain, Hudson, Harene and Mackenzie were to play critical roles in the founding days of the Geological Survey of Canada, which celebrates its 150th birthday this year. They not only laid the foundation for the country's early economic development but provided some of the earliest—and most fascinating—glimpses of Canada's natural history and its native peoples.

"They were the last white men," wrote Ralph Allen in Macken's 1962, "to see Canada first—as a land still in a large degree unknown. Their main job, nominally, was to sound and chart its endless tides of rock, but it inevitably fell to them to record its scattered people and their life, its birds, and animals, its flowers, trees and skies."

In truth, the legislature of the Province of Canada (which then comprised the southern parts of present-day Ontario and Quebec) was as little interested in charting the endless tides of rock as it was in assembling an inventory of flora and fauna when it resolved in 1841 "that a sum not exceeding one thousand five hundred pounds sterling be granted to Her Majesty to defray the probable expense in causing a Geological Survey of the Province to be made." Its motivation was both prosaic and compelling—economics. It was looking for minerals, particularly coal, to fuel the province's entry into the new industrial age that was sweeping Europe and the United States.

The new Canada, born of bright hope, was in danger of becoming an economic backwater. The colons, with a population of several hundred thousand native people and about two million settlers, subsisted on a largely agrarian economy, growing timber and wheat for Britain. It produced a little iron (using charcoal for smelting), mostly for export, but other minerals were virtually unknown, and its one railway, the Champlain and St. Lawrence, in Quebec, boasted a total of about 150 kilometres of track. Coal held the key to industrial growth: coal to heat and light houses and factories, to drive engines and to produce coke to replace charcoal for smelting iron ore.

Given the legislature's priorities, William Edmund Logan was a good choice as the Survey's first director; he knew a great deal about coal. Born in Montreal of wealthy Scottish parents, Logan was educated in Edinburgh before entering his uncle's business in Britain, working first in its London counting house and then managing a copper smelter and coal mine in Wales. His interest in the origin of coal prompted him to write a paper on the subject, which resulted in his being elected a fellow of the Geological Society of London; he came to be recognized as an authority on the geology of coal and copper.

Logan, a bachelor, took up his duties in Canada in 1843. At the age of 45, after 25 years as an exposant, he had finally found his true vocation, "as it destined for it by the sure hand of Providence," in the words of a later director of the Survey. Working, with one assistant, Alexander Murray, out of the Survey's headquarters in Montreal, Logan displayed a dedication to the job that soon became legendary.
same time, the country's store of geological knowledge had grown immeasurably. Logan himself was showered with honours, and two mountains, a number of lakes, an island, a township and a mineral (olegite) were named after him.

The coming of Confederation, which joined the existing Province of Canada with Nova Scotia and New Brunswick to form the new Dominion of Canada (followed within the next six years by the addition of Manitoba, British Columbia and Prince Edward Island), vastly increased the scope of the Survey's operations. In many ways, Alfred Selwyn, Logan's hand-picked successor, who had previously headed a geological survey in Australia, was the right man for the job.

In the end, Selwyn's shortcomings—his sharp tongue, his disputatious nature, his dislike for engineers and his gift for making enemies—were to lead to his downfall, and he was eventually superseded ("fired," said Selwyn) by the government. But for more than a quarter of a century he directed the Survey in what was perhaps the most glorious era of its exploration in its history. During this period the foundations were laid for the subsequent exploration of Klondike gold, the petroleum wealth of western Canada and the uranium of the North.

Much of the new Dominion was terra incognita. The large part of the immense West was essentially unexplored—to the west of Hudson Bay the infamous Barren Lands were reputed to be "swarming with cannibals." The geologist Joseph T. Tyrrell, who was the first man since Samuel Hearne to explore the Barrens, wrote: "Of almost this entire territory, less was known than of the remotest districts of darkest Africa." Nine years earlier, while exploring what is now central Alberta for the Survey, Tyrrell had had an eventful week. On the Red Deer River he stumbled upon one of the two richest drypto- saur beds in the world. Three days later he discovered the biggest coal deposit in Canada, which became the economic foundation for the community of Drumheller.

Selwyn himself led a party to survey the geology and mineral resources along the route of the proposed railway to the West (a condition of British Columbia's joining Confederation), while his newly enlarged staff probed the terrain, and mapped the terrain of a vastly enlarged Canada. Travelling by canoe, by dog-sled, on horseback and on foot, they endured almost unimaginable hardships and survived untold hazards. They were constantly beset by mosquitoes and blackflies, and bears were a not infrequent hazard. Adding to their difficulties was the terrain itself—by turns trackless and barren, craggy, interspersed with swamp, and sometimes cut by raging rivers, often thickly forested. It was a taste that called for constant innovation and determination. Tyrrell and his team ran out of food and lived for weeks on carrots, duck, ptarmigan, rabbit and polar bear while exploring and mapping the considerable area between Hudson Bay and Great Slave Lake. The varied menu owed much to the fact that Tyrrell was a deadly shot from either shoulder.

Another Survey geologist, Albert Low, later to become director, spent two years on one expedition in Labrador and the Ungava Peninsula in northern Quebec, covering 1,600 kilometres by ship, about 800 by dog-sled, nearly 1,480 by canoe and another 1,600 on foot. But then, Low was nothing if not stubborn. A decade earlier he had been sent on a joint dominion-provincial survey to the Lake Misiassinai area in Quebec. In midwinter he had become embroiled in a jurisdictional dispute with the leader of the Quebec half of the party and had put on his snowshoes and walked out to Quebec City (a distance of almost 500 kilometres), where he had caught a train to Ottawa to get a ruling from his superiors. After winning full command of the expedition, he had taken the train back to Quebec City and then walked all the way back to Lake Misiassinai, in time to start the summer's operations.

But it was all worth it because these pioneering journeys yielded untold treasures: geological discoveries, mineral finds, reports of oil seeps, detailed topographical maps, climatological data, samples of flora and fauna, and Inuit artifacts and much more. There was no more careful observer or diligent recorder of every facet of scientific and sociological study than George Mercer Dawson, the towering genius composed by early 20th-century frame of a misshapen childhood, two old boys, like Logan, with whom he shared a talent for painting, Dawson, who succeeded Selwyn as director of the Survey, was another strikingly multidisciplined figure: geologist, botanist, anthropologist, diplomat and poet.

A native of Pictou, N.S., Dawson was the son of Sir William Dawson, a distinguished pre-Darwinian geologist who became principal of McGill University in Montreal.

Before joining the Survey, Dawson had already made a name for himself with his meticulous observations as a member of the North American Boundary Commission, which was set up to establish the international border between Canada and the United States; he was soon to add lustre to that reputation as a member of the Survey.

What Logan was to eastern Canada, Dawson was to the West. He was exploring the Yukon (and predicting rich gold discoveries) nearly a decade before the Klondike gold rush of 1896; Dawson City was named in his honour. Indeed, the early prospectors used his maps to blaze their trails, and, inevitably perhaps, he became known to his colleagues as Klondike Dawson.

Geology, however, was but one of Dawson's wide-ranging interests; he was a keen anthropologist with a particular interest in the cultures of North American Indians. In fact, he has been called the father of Canadian anthropology. He was the author of a comprehensive report on the Haida culture which he compiled while surveying the Queen Charlotte Islands, and he also published papers on the Indians of the Yukon and northern British Columbia, the Kwakiutl people of Vancouver Island and the Shuswap of central British Columbia.

When Dawson died suddenly at the age of 51, Robert Bell was appointed acting director. Despite Bell's taste for political maneuvering and the low opinion he held of some of his colleagues, he was able to carry on the Survey's work (in part due to Selwyn's and he detected Dawson), he was yet another example of the sort of master of many disciplines that the Survey was fortunate to attract. His technical qualifications, if not his diplomatic skills, were formidable, his knowledge of Canada and its geology extensive and his contribution to the Survey over many years considerable was, for example, one of the first scientists to recognize the country's energy potential and chart the extent of the oil sands of western Canada. His association with the Survey was not, however, destined to survive. Although much was accomplished under Bell's direction, including a move to pay greater attention to Canada's mineral development, he did not enjoy the confidence of Laurier's Liberal government, and it became increasingly apparent that his political goose was well and truly cooked. The government of the time was in the process of bringing changing priorities and new demands. By 1905, when Alberta and Saskatchewan joined Confederation, Canada had assumed much the shape of its contemporary boundaries (only Newfoundland remained to be added, in 1949). While much remained to be learned about Canada and its geography, much less was, in the geographic sense, much less of the country left to explore. The basis of the country's infrastructure was in place, its manufacturing centres were established, and, although the oil industry of western Canada was yet to be born, the natural resource industries were a growing economic asset. The mining industry, in particular, was in a nascent state for the establishment of the Survey six decades earlier, had come to rival forestry and agriculture as a source of export earnings, and there was a strong interest in the provision of information on promising mineral deposits.

The Survey responded by placing new emphasis on specialized skills, while at the same time ensuring that the result was a suit of theoretical knowledge about the country's geological origins and processes was now rich. It was a familiar balancing act that lurked back to Logan's goal of
deep-diving research vessels to investigate the formation of new mineral deposits along the underwater Juan de Fuca Ridge, 200 kilometres off the west coast of Vancouver Island. In the best traditions of the Survey, this is a project that not only pays practical dividends in helping determine Canada's undoubted resource potential but is adding greatly to science's understanding of plate tectonics, of how the earth's crust is being destroyed and recycled into new rocks. This pioneering study of metal-bearing rocks as they are being formed is helping scientists to develop new theories that could lead to discoveries on land.

On the other hand, says Ken Babcock, the assistant deputy minister at the Department of Energy, Mines and Resources who oversees the Survey, some of the questions to which scientists are continuing to seek answers are as old as the Survey itself. It is becoming increasingly involved, for example, in the search for new sources of crude oil and natural gas in western Canada. “We are forging a new relationship with the energy industry,” says Babcock. “As some of the major companies diminish their activities in western Canada, the smaller players become more important. And these companies, with limited exploration budgets, have a greater need for the kind of information we can provide, in much the same way that we have been the major source of geological information for the mining industry throughout the Survey’s life.”

The Survey has already produced two major studies of the remaining crude oil and natural gas potential in western Canada, and it plans to produce more. Babcock expects that it will play a supporting role for private energy ventures abroad. “Given the immense amount of geological expertise we have in this country,” he says, “and given the demand that exists for such knowledge in countries like Russia, there is no reason why Canada cannot become a leading supplier of this sort of expertise.”

These days the Survey finds itself increasingly involved in many areas of environmental studies, and sometime in the next century, Riddell predicts, such work will occupy fully half of its efforts. Indeed, Babcock sees the Survey’s long-term role as reconciling a sustainable level of development in Canada with the health of the environment.

Currently hosted an international conference of geologists, says Babcock, “and the main theme to emerge from the conference was the worldwide concern over environmental issues. The Survey has to stake out its interests in this environment as well as support the resource industry, or it will wane in importance.”

As the custodian of Canada’s geological record, the Survey possesses an unparalleled historical perspective helpful in its understanding of today’s changes in the environment. It is now producing an atlas portraying the major changes that have occurred in the country’s geography and environment over the past 18,000 years. Again, such studies aimed at helping understand the likely effects on Canada of global climatic changes are far from being purely academic: for example, one of the areas under intensive study, Alberta’s Peace River, supplies a great deal of wheat to Canada and the world, and there are important economic reasons for understanding the implications of a changing climate.

The Survey also tackles more near-term environmental questions, such as the likely effect on water quality of particular municipal or industrial projects. Sometimes such work pays unexpected dividends: a recent study of contaminants in Halifax harbour, pivotal to the planning of a new sewage outfall, discovered some two dozen shipwrecks.

In one sense, the effort that the Survey is today devoting to the protection of the environment finds an interesting echo in the past. At the very time that Logan was building his Survey in the East, the Canadian painter Paul Kane was painting the continent westward, promoting another vision of the new country: that of the “noble savage” living in harmony with unspoiled nature.

“Today,” says Robin Riddell, “it is we who year after the unspoilt wilderness and bemoan how our exploitation and pollution have destroyed it. The Geological Survey is now spending a large portion of its resources investigating ways in which we can live with the land without destroying it. Perhaps we are finally appreciating what the native peoples of Canada knew all along: that the land is a living system of which we are only a part; that we do not own the land, it owns us. We have come a long way only to discover that, as always, there is still a long way to go.”

Enough, one feels, to keep the Survey going for another 150 years. Logan would have approved.
NEW OIL FROM OLD
Less and less used engine oil is thrown away these days. As customers come to expect suppliers to assume crude-to-gra

B Y J A N F I N L A Y S O N

Imag e a long line of railway tank cars stretching 64 kilometres, each filled with used lubricating oil. A train would be carrying nearly 200 million litres — about the amount of used oil Canadians throw away each year, says the Canadian Petroleum Products Institute (CPPI). Although this amount represents only about a quarter of all lubricating oils sold annually in this country, improper disposal is a growing concern as environmental awareness and expectations increase. Gore are the days when the accepted and expedient way to get rid of used oil was to spray it on country roads to dampen the summer dust. About one billion litres of lubricating oils are sold every year in Canada, according to CPPI estimates. About half is actually consumed in the process of lubricating machinery and motor vehicles. The other half becomes "used oil." About 250 million litres of this used oil are collected from industrial and commercial customers. Some is used in industrial fuel and some of it is recycled. That leaves another 250 million litres unaccounted for. The CPPI believes people just throw it away, and that is the moment when used oil becomes everybody's problem. "Improper disposal" is a nice way of saying that people are dumping used oil into ditches, down household drains and into storm sewers. The result is contaminated soil, contaminated ground water and contaminated rivers and lakes. The contamination results from the metal or the chemi
cal compounds that are added to boost the lubricating performance of engine oil or from the chemical by-products that are formed during combustion. For example, when engine oils are blended, zinc is added to help protect the engine from wear and detergent compounds are added to help neutralize acid build-up. As the engine uses lubricating oil, chemical dispersants encapsulate tiny particles that break away from the engine as a result of heat and friction and would otherwise damage the engine. In other words, used engine oil, like all used lubricants, is a mixture of inorganic and organic compounds, including metal residues that are unpalatable to the environment. The CPPI, a national nonprofit association of refiners and marketers, wants people to understand the hazards of improper disposal and to act more responsibly. To help people do this it has launched a national used-oil collection program to enable the "do-it-yourselves" — people who change their own oil — to dispose of their used oil in an environmentally safe way and a public awareness campaign that will try to persuade people to make use of the collection program. It has been a tough slog, but things are finally starting to take off, says Tony Wendler, the CPPI's much-travelled national used-oil coordinator. He has crisscrossed the country countless times during the last couple of years, pushing the institute's cause with three key groups — sellers of lubricating oils, customers, and governments who regulate waste management practices. The CPPI has doggedly pursued two basic beliefs behind its vision of a national used-oil program: to share the burden, all distributors and retailers — not only the manufactur ers — need to be involved in used-oil collection and disposal, and to make the program work, governments need to pass legislation and develop regulations that will help enforce compliance. For Wendler, the moment to sow the idea was nearly a year ago, when the CPPI invited all interested parties to sit down together at a three-day national used-oil workshop in Montreal. More than 150 delegates attended, and by the end of it the CPPI had won the elusive consensus it had been counting for almost two years — one it needed to implement a national used-oil collection program. As well, the federal and provincial governments were now unanimously on board. "Peer pressure has worked," says Wendler. "Nobody wants to be perceived as opposing environmental initiatives, and from the point of view of governments, this is a perfect program because it has no direct financial or managerial burden for them." These days all eyes are on British Columbia, which is a giant step ahead of the other provinces in terms of regulating the disposal of used oil. "The key to the used-oil collection program," says Wendler, is "requiring anybody who sells lubricants to provide a return system. In British Co lumbia, since September 1, it has been mandatory for places where oil is sold to have either an on-site collection facility or a contractual arrangement for the use by customers of a collection facility within a four-kilometre radius of the point of sale. Other provinces are stepping smartly down their respective paths of regulation, and Wendler figures that by the end of the year all will have legislation in place requiring vendors of oil to provide a facility for the return of the oil they sell. The next step will be to persuade individuals to return used oil. "This is the tricky bit, because the onus is on customers, but we have no choice there, no way to regulate individuals." The CPPI is involved in the development of a massive public awareness campaign, supported by Environment Canada, to build the kind of momentum that will successfully propelled householders in municipalities across the country to separate household waste — glass, plastics, cardboard and newspapers — for recycling. Another important tenet of the CPPI used-oil collection program asks those collecting used oil to know where it's headed before it's collected — this to avoid the pitfall of recycling it. As industry representatives are quick to point out, it's one thing for municipalities to store mountains of newspapers for recycling but quite another to contemplate leaping large amounts of used oil, which can contam inate toxic by-products of combustion. "We don't want to just keep moving the problem around," says Wendler. "What we hope is that it will be recycled or reused." Industry watchers see a growing expectation among customers that suppliers will handle the products they sell from cradle to grave. "This expectation has developed so dramatically over the past five years that I can see the day coming when suppliers simply won't be in business if they don't facilitate the collection of their product after it has been used," says Bill Innes, senior vice president of Imperial Oil's products division and a former chairman of the CPPI. "Consumers are questioning us on a daily basis — we have to do the loop, and I believe individuals will respond well to used-oil recycling programs." Imperial's response has been to adapt its lubricant business to meet changing customer expectations. "It used to be that we simply manufactured, moved and sold lubricants and provided customer service. Now we also collect and reuse most of what we sell, because, basically, the customer wants us to," says Steve Matthews, Imperial's manager of lubricants and specialty products. He makes an analogy to the chewing-gum industry. "When people finally saw the connection between sugar consumption and dental disease, gum manufacturers changed channels and started making sugarless gum pretty fast. That's a good example of being responsive to the public environment and making a fundamental change in the way you run your business." The nature of the lubricant business dictates that kind of awareness, Innes and Matthews agree. It's a specialty area with endless challenges, including custom blending to meet customers' needs.
in industrial fuel in manufacturing processes — like cement making — where high heat essentially incinerates impurities, leaving harmless ash. Or it can be filtered, reprocessed and remixed with fuel for industrial burners. Sometimes it becomes a component of asphalt used in paving or roofing materials. But the most promising use — and the one that generates infectious enthusiasm among scientists at Imperial’s research laboratory in Sarnia, Ont. — is as lubricating products, after it has been refined.

For Imperial’s researchers, refined oil is a thing of beauty. They talk glowingly about the life spans of oil molecules, about the high proportion that can be recycled again and again and about their mission to find new ways to immortalize these molecules.

“It’s an environmentalist’s dream to find ways to recyle and reuse a nonrenewable resource like oil,” says Mac Donald, an Imperial chemist who has spent 25 years working in lube processing technology.

“Unlike fuels, which just burn up, oil is a reusable resource. The molecular makeup is such that you can recover a great deal of it after use, and its quality is excellent.”

Nowadays, says Mac Donald, technology is opening up a dazzling future for used oil.

At Imperial, one such example is a new line of Ezzo-branded engine and hydraulic oils made from at least 50 percent recycled refined oil. Their brand name, Opticlear, is derived from the words “environment” and “technology.” They are packaged in plastic bottles that are 25 percent postconsumer resin — that is, plastic containers such as returnable milk jugs that have been cleaned, reprocessed and mixed with new resin to make other containers. By the end of this year Imperial plans to increase the postconsumer resin component to 50 percent.

The Ezzo development team, led by Chris May, a chemist, and Caroline Schieck, a chemical technologist, laboured long and hard to formulate products that would meet the technical requirements and stringent industry specifications and satisfy customers. The science to blend excellent refined products exists, says May, but convincing consumers that the results have the same quality as new products is a real challenge.

“People have a perception that refined oil is of dubious quality,” says May. “That’s because historically it has often been the case.” The secret of success lies in blending refined oil with virgin oils. This means the slightest variation in the quality of the refined oil can be controlled by adjusting the amount of virgin oil used with it. Imperial buys refined oil that meets strict quality specifications from two of the country’s major refiners, then uses its own unique additives and technology to blend it into Ezzo products. "At the moment, the economies of scale in blending make our own refining," says Bill Innes, "a little bit more expensive." But as its production line grows, the company hopes to catch up with its competitors.

One critical endorsement should help change public opinion of refined products. Environment Canada has awarded Ezzo engine oils the coveted EcoLogo, which it grants to products that are environmentally friendly. This symbol is prominently displayed on Ezzo Ezzo product labels. And it will be labeled as “Ezzo Ezzo engine oil” by returning your used oil to a collection depot.

The fact is, Imperial’s Ezzo products exceed all engine manufacturers’ specifications and new-car warranty requirements. With the recent introduction of the newest Ezzo product, a 5W-30 engine oil — the viscosity grade recommended by manufacturers for 90 percent of new cars — Imperial believes it is leading the market for refined products.

But can customer resistance be overcome? It has been at Bell Canada, which uses Ezzo engine oils in its fleet of 50,000 vehicles throughout Ontario and Quebec. Norman Olligan, a manager of purchasing with Bell, toured the Sarnia research laboratory two summers ago to learn about the Ezzo line.

“At first we were skeptical,” he says, “but we were very impressed by the professionalism, the level of testing and the quality control at Sarnia. It was a bit difficult to convince our fleet administration to use the product because of the perception that refined products are inferior. So we opted for the Ezzo name brand as our guarantee. We knew the company would stand by its product.

A number of municipalities and delivery fleets — including Imperial’s own — are using Ezzo engine oils in their vehicles. In an Ontario city, the local police force provided its cars for extensive product testing. It was, by all accounts, an interesting performance.

“We put the test vehicles on what we call severe service,” says Chris May. “It involves using the oil in all kinds of weather and driving conditions for more than twice as long as you normally would before changing it to try to magnify differences in performance.”

Imperial’s Ezzo lines on Ezzo products as one plank of a growing environmental platform. Other products and services include reduced-emission gasolines, made available in the greater Vancouver area, where local smog is an unwelcome summertime condition, and vapour-recovery systems to prevent gasoline vapours from escaping into the atmosphere during fuel transfer.

“Ezzo products that bear the environmental seal exceed equipment manufacturers’ and new-car warranty requirements,” says Hilda MacKow, manager of customer services and brand advertising. “We’re giving customers the opportunity to be environmentally responsible.”

Recent customer surveys show that buyers not only want the choice, they expect companies to provide it at no greater cost. “People are telling us we have an obligation to make products that give them an environmental choice,” says MacKow. “But they’re not prepared to pay any more for them.”

She predicts this demonstrable shift in public opinion — compared with a couple of years ago when people said they would pay a premium for products kinder to the environment — will have a big impact on the way companies develop and market new products.

For his part, Bill Innes believes it could take a couple of years to build a loyal customer segment for lubricating products made from refined oil to educate people about the merits of returning used engine oil. But he has a hunch that eventually both these things will come about. “Conserving and reusing is a fundamental consumer trend,” he says. “For Imperial, the success of using the oil we sell is definitely a competitive opportunity because we have the largest service station network to do it with.”
I'm driving the Pacific Rim Highway on Vancouver Island, between Port Alberni and Tofino on the west coast. It's a mountain road, full of reverse twists and steep climbs. A heavy rain is beginning to fall. I'm doing the driving, my wife a bit tired from sleeping on a bad mattress the night before.

We pass Sproat Lake on our left, the sound of rain a steady drum on the car roof. Clouds and mist hang over and between the mountains, and you can see yellow splashes of deciduous trees among the evergreens. And places where all the trees have vanished from logging, as if earth itself had been shaved with a very sharp razor.

It's 120 kilometres from Alberni to Tofino, not very far on a good stretch of the Trans-Canada Highway—but, come to think of it, this is the far western leg of the Trans-Canada. Four or five silver necklaces decorate each mountain—temporary waterfalls created by the rain. They give me the feeling that they bind earth to an invisible sky. And I'm in danger of wrecking the car, peering through rain at the encircling mountains, trying to think of words to describe all this. There are none. The annual rainfall in this area is four or five metres—that much water would be well...
over the head of the tallest basketball player.

The weather is clearing a little when we pass
the turn-off to Ucluelet, stopping at Long Beach,
the ancient Pacific Ocean. When I was here before, 10 years ago, writing an article on West Coast fishing for Maclean's magazine, I remember seeing grey whales breaching far out in calm wa-
ter. This time there's nothing but empty sea and
a few gulls wheeling above rock canyons along the shore. You
think of beaches as long uninterrupted stretches of sand,
but here the sand is interspersed with rock formations of all
sizes and fantastic shapes, sculpted by weather and waves.
Tofino is a fishing and logging community of about 1,000
people on Clayoquot Sound. It has, alas, become a tourist
centre, with more than half a million people visiting the
Pacific Rim area in season, many of them for whale-watch-
ing. At the local library I ask for names of people familiar
with Vancouver Island's west coast and its history. At eight
o'clock in the evening, climbing a long driveway to Ken
Gibson's house, perched on a high hill in complete dark-
ness, feeling like a burglar with my flashlight, I wonder if
this was a good idea.

But I am expected. I tap on a porch window and am
ushered into the living room. Ken Gibson is a large greying
man in his mid-fifties. He grows prize rhododendrons for
his hobby and writes about them. Glancing at the colour pic-
tures of lush blooms in his magazine articles, I see that he
knows his stuff. Dot Gibson, Ken's wife, is slightly younger
than her husband.

Ken is a marine contractor. He builds fish pens for piscac-
torial farming, wharfs, piers and the like. Fortunately I feel
comfortable with these people, something that doesn't al-
ways happen when you meet strangers. We plunge immedi-
ately into talk about nearly everything. I know this place
has nearly the highest rainfall in Canada; Ken says the
Pacific Rim has the mildest climate as well.

"When you cross the mountains at Sutton Pass every-
thing changes. The weather gets much milder; we had the
same average temperature here last winter as Oakland, Cal-
ifornia." I goggle a little unbelievingly at this information.
"It's true," Ken insists. "Arctic weather blows south down
the valley of the Columbia River, then west to the U.S.
coast. West of Sutton Pass is true rainforest as well, not the
same trees.

"Before Sutton Pass I hadn't even noticed that pass
while driving west; the trees are fir, dogwood, arbutus, ma-
ple and so on; after the pass you get hemlock, balsam,
cedar and no fir. And very few deciduous trees either;" he
finishes triumphantly.

I make appropriate noises of surprise and marvel, pri-

and the local people joining in to celebrate."

"Who paid?" I want to know.

Ken grins. "The bride's parents, of course."

On my previous visit here, I rode the fish packer Pacific Ocean west from Vancouver at mid-
night. By 3:10 a.m. we had somehow gotten our-
selves enmeshed in a field of floating logs in Ac-
tive Pass, which runs between the Gulf Islands of
Galloso and Mayne. With engines stopped we drifted
along on momentum alone, gently bumping against logs.
At that point I was so seasick I hardly knew where we were
or cared much; it felt as if I was going to die and I was afraid
I might not.

The Pacific Ocean anchored next day at Port Renfrew,
a deep-sea harbour 100 kilometres north along the island's
west coast, where we took salmon aboard from Gill netters.
This area is very dangerous for shipping, called "the grave-
yard of the Pacific" for good and sufficient reasons. East-
bound ships get careless and sometimes don't watch their
radar very closely. Not long before my voyage a Japanese
ship with a cargo of Dodge Celts automobiles was wrecked
north of here, stranded among rocks like great stone teeth.
"Of course these Celts curb jumpers disappeared damn
quick," the Pacific Ocean's captain, Herb Shumway, told
me. "Miraculous the way things disappear off a wrecked
ship. Barges pulled alongside, and the cars get winched off
before you could say Dodge Celts." And one of Herb's eye-
 lids drooped in a barely perceptible wink.

From Port Renfrew I flew north to Tofino in a tiny Cessna
Eating, drinking, and touring are the mainstays of Tofino, which until the late 1940s was reachable only by water. Tides, if cut by wooden skiffs, by scenic highways that wind through mountains that seem to “bleed earth in invisible sky.”

That was my first introduction to Tofino, which looks much the same now as it did then: several restaurants; some motels; charter boats for whale-watching; addicts; an art gallery; a supermarket; two service stations; and a residential area away from the waterfront. Over the past few years there has been an influx of new-comers to the townpeople call “hippies,” free spirits who live as they may in the surrounding forests. I’m a bit intrigued by the notion of “hippies” (which I had thought to be an outdated term) on the Pacific Rim. Meeting one on the street I say “Hi.” He responds with “Yeah, man.” (Does that mean I’m deigned to the tribe?)

Tofino is a town dominated by the sea. Visitors are aware of this immediately; local people probably take it for granted. Nearly all the streets, wherever they are, provide at least a glimpse of the sea, bright blue in sunlight or lead-grey in wet weather, among the misty offshore islands. The sight, the smell, taste, touch and sound of the sea.

There is, of course, a fleet of fishing boats in the harbour, as well as docks and quays, all at the service of Lord Salmon and Lord Halibut, not to mention the tourist visitors. And there is an unmistakable living rhythm of lunar tides here, which remains in our blood—like a memory of being born in the great rush of waters, a lost memory of peace.

Houses away from the waterfront are any houses, ordinary enough to pass without special remark. But when I call on retired fisherman Alf Jensen at Hagard Ho next to B.C. Packets, I feel bemused and amused by the place. Along the steep driveway running down to a waterfront house, blue vinyl fenders from fishing boats, in the rock garden, a white ceramic toilet with a pair of black boots sticking out, looking as if their owner had dived headfirst into the toilet. And there is a sign saying “First free trade—then G.S.T.: goodbye cruel world.” Another unfriendly sign says “Keep out.”

I go down the driveway and ring the ship’s bell outside Jensen’s front door. Even though I am expecting a sonic boom, I can’t help jumping at that end-of-the-world sound. Then for about a minute and a half I just stand at the door, thinking about Alf Jensen (later on, somebody tells me he has gone to Florida). The guy is obviously a conscious eccentric: he knows the house and he is being looked at and enjoys the attention. It would have been interesting to meet him. I wouldn’t be surprised if he has vestigial gills.

On Strawberry Island, just across from our motel on Tofino Inlet, stands one of the local landmarks: a wooden sculpture called Weeping Cedar Woman, the right hand upraised in protest. The statue is three metres tall and wades in river of tears for the continuing devastation of West Coast landscape. And that means, principally, logging operations. Godfrey Stephenson, the sculptor, certainly had his mind on native people when he created this imposing monument. Later on, a birch-bark skirt was added— for modesty’s sake, I assume.

Sulo Hovt operates a fishing trawler out of Tofino harbour. His wife, June, works at the Tofino Co-op. She is short, dark and vivacious, in contrast to Sulo, who is measured in speech, with blond hair becoming a bit scatty at age 40. The daughter of the house, 11-year-old Keane, is anxious that I read her stories and school narratives, while I disdain all critical knowledge and authority.

Talking with Sulo, I want to know what it’s like to be the skipper of a fishing boat. How big a crew have you? (Three.) What do you worry about most when outward bound? (Squalls.) How long are you at sea? (Eight to 10 days.) And how does it feel?

There is really no answer to that last one. Because we humans are all different, although all the same. Different in our reactions to danger and the way we think. The same in the basics—physical needs like eating and sleeping. I am, for instance, sometimes strung as tightly as a violin, my nerves swaying at unexpected noises and situations. Sulo, I think, lives at a different level. Not a phlegmatic one, but existing in a calm ambiance made necessary by a crew of three on the Full Circle.

"Last year," he says, "there was the quota to make. And only 12 days to catch enough sockeye salmon to fill that quota."

"How many lines from the boat?"

"Six. They’ve got flashers on them, 20 for each line. A flasher is a kind of plastic lure that imitates shrimp by wiggling in the water, goes ‘hoonchick-keechick’ to the fish.”

"You mean they think the flasher is sexy? I thought flashers were exhibitions at football games."

"Not this kind," Sulo says shortly. "Put yourself in my place. Here we are in heavy fog—"

"Fog? I want to know. How did fog get into this story?"

"You aren’t listening. Anyway, there we are in thick fog, with 11 days to haul our quota of fish into the Full Circle,"
with fish buyers on shore waiting for us to get back. Time passes quickly: "Then we've got a week to fill the quota, then just three days... ."

And Salo's face remembers the tension he felt then: will the full quota of salmon be caught before the cutoff date for fishing? The deep blue eyes regard me enigmatically.

Of course he knows the answer to that question, and I don't. But just for a moment, I can see him there: three days left until the cutoff date for trolling. And all around him fog, fog, FOG.

"Well, did you make it?"
Salo grins at me. "Sure we did."

"On your boat, all those modern mechanical gimmicks, brain, depth sounder, radar...?"

"Yep, we have them on the Full Circle. But the others, the other trolls, they're all around us. You can see 'em in the green light on the radar screen, but you can't see them with your eyes. Fifteen or 20 metres is the extent of your vision in that fog anyway."

"And once in a while, when we're about 100 kilometres out in fog, a big fighter, acting like it's not sure of its bearings, maybe doesn't even know we're there because we're so close—it freighter-sails right through the trolling fleet."

"Like a fox among chickens?"

"Yeah, and Salo grins again. "At that point I'm liable to be a little nervous."

For a moment I have this displaced-in-time-and-space feeling of being suspended in white darkness myself, while all the mechanical gadgets flash and murmur before my eyes. Below the Full Circle ghostly shapes of fish in their watery dimension, all around us the little electronic dots and dashes of other trolls. But nothing real and tangible except the Full Circle and its crew is actually present, nothing you can touch that all your senses can testify is real.

Next day I run into Ken Gibson again, at the Loft Restaurant. We drink coffee and talk awhile, then he shows me this 10-metre palm tree at his mother's house. I'll wear that palm tree in my hair more than five metres tall and kind of scruffy looking anyway.

"Are you telling me that tree is 10 metres tall?" I say accusingly.

He smiles. "Would you maybe settle for eight metres?"

Walter Guppy is a retired electrical contractor, a prospector, author of a book on his mining experiences and very knowledgeable about the early days of Tofino. He is more than 70 now, greying and grizzled with mobile eyebrows. We talk about the hippies and Clayoquot Indians, native to this area. The town site was surveyed in 1912, but homesteads existed even before that. Tofino became a municipality in 1912, settled mainly by Norwegians and Scots—names like Hansen, Albert, MacLeod and Mackenzie still dominate the telephone book—but was cut off from the outside world, reached only by sea until Walter Guppy walked over the mountains in 1948.

"We wanted publicity," Guppy says. "Newspaper publicity that would tell the government this proposed road was perfectly feasible. And it was."

"No trouble at all, a stroll to the corner store!"

Walter twirls at me. "Not much. A boat across Kenney Lake and up the river from there. And this was in June. I was 30 years old then, lots of energy. And there was a Department of Mines trail to follow, windfalls cut down... ."

"Where did you sleep?"

"At a limen's cabin. Only trouble was the water for tea was full of mosquito wiggles. But that won't kill you."

He chuckles reminiscently. "Another boat as Sprout Lake. But after Sutton Pass on the return trip, the trail was grown up with three-metre elders. You had to push your way through."

"And the government paid some attention, the road did get built."

"Yes, MacMillan Bloedel and British Columbia Forest Products built sections of it in return for logging concessions from the government. And the road opened in 1949!"

It occurs to me that so-called progress is generally balanced by something else: that road-building trade probably resulted in clear-cutting and an uninterestingly mountain landscape stripped of trees here and there. It also resulted in employment for many B.C. loggers. Take your pick: what's most desirable for prosperity and progress and our children's future?

On the morning of our departure the mountains across Tofino Inlet and Clayoquot Sound are draped in mist as if for a wedding. The town is a cliche of beauty. Green grass in the harbour and beyond melts into grey, intersecting and overlapping and surrounding one another, climbing into an invisible sky that has no ending.

I think of Houseman's line, "the land of lost content," which is the past: when Walter Guppy was young and saved the mountain trails to Port Alberni, when the Princess Marguerite called at Tofino and its captain married the waiting lovers and wild parties went on all night; and even now I am leaving these mist-flung mountains behind me in the mist, and do not expect to return.

I am already homesick for what I have not yet lost."

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WHISPERS OF THE PAST

Thought to have been carved between A.D. 900 and 1400, the Peterborough petroglyphs are said to have been the centre of the Algongian universe

BY WARREN GERARD

There is a stillness to this place of whispers in the fragrant pine forest. It sharpens the senses and beckons the spirit. And it creates the feeling that someone hidden from view is watching as the trail winds snake-like through the sunshine to its startling end. The mood of reverent expectation is abruptly broken by the seven-sided steel and glass structure that is alien to this rugged wilderness inhabited by songbirds, deer, bear and other wildlife and by the sacred teaching rocks of the Algongians.

This is Petroglyph Provincial Park ("petroglyph" is derived from the Greek words for "rock" and "carving") on the southern edge of the Canadian Shield, about 56 kilometres northeast of Peterborough, Ont. What lies here are aboriginal voices from long ago, carved out long before the coming of the white man - on a great rock of white crystalline marble, 24 metres by 15 metres in site, surrounded as it is for protection by the eight-year-old pristine structure of steel and glass.

Inside, the surface of the rock gently sloping toward the sunrise is tattooed with lifetimes of visions and stories told through more than 900 engravings of mythical and real beings and the animals of the forest that have always dwelt here. The weathered surface is tortured by cracks, crevices and fissures that reach beneath the earth to the inner world of darkness and musical but unseen streams. The natural architecture between the underworld and the sky was seen as a sacred place, a seat of the supernatural, that called the teaching shamans, or medicine men, to celebrate their gifts powers of healing and prophecy and to communicate with the spirits of the nether world and the sky from here at the centre of the Algongian universe.

From what is known, the Algongian-speaking peoples - including the Ojibwa, Cree, Algonquin, Ottawa, Montagnais nations, the Naskapi nation of Ontario and Quebec and the Micmac and Maliseet of the southern Maritime provinces - ranged from the eastern Canadian subarctic to as far west as the Prairies and south to North Carolina. Today it is thought the carvers of the rock in the Peterborough area were the Ontario Algongians, and anthropologists and archaeologists believe they did their inspired work between A.D. 900 and 1400.

The Ontario Algongians lived in bands of 100 to 400 people, had their own hunting territories and were politically independent of one another. In war - against the Sioux, the Iroquois or the English - they armed themselves with bows and arrows, wooden clubs, knives and round shields covered with animal hides, and in battle the Algongian warrior spand no one - not man, woman or child. They were not farmers, but in late summer they gathered wild rice and berries, which they preserved for winter, when they would hunt moose and other animals. In spring and summer they killed beaver and smaller game and speared sturgeon and other fish that went close to shore to spawn. In their pursuit of food, the Ojibwa were constantly on the move, and the most important material in their lives was birch bark, which they used for canoes, utensils and for the outside covering of their dome-shaped dwellings.

It is believed that these were the people who carved the rock near Peterborough. The first white man to discover the site was Charles Kingam, a member of the Peterborough Historical Society. For some reason, which is not clear today, his 1924 discovery drew little attention. So once again, the rock was left to its guardian spirits. But 30 years later, a geological team in search of minerals rediscovered the site. In 1967 an extensive re-examination of the site was carried out by Dr. Joan Vastokas and her husband, Dr. Roman Vastokas, both professors of anthropology at Trent University in Peterborough. They later wrote a scholarly and highly readable book on the site, entitled Sacred Art of the Algongians. In 1976 a 1,554-hectare provincial park was created.

"It's a place where one feels very comfortable," Joan Vastokas says. "You can see the reality in front of you, but you can also see hidden meanings. I think what is going on at the petroglyphs is similar to what is going on at Stonehenge [built during the late Neolithic period or early Bronze Age - 1800 to 1400 B.C.] in the south of England and other places. It probably has to do with universal responses to configurations in the earth. And the earth is sacred. That's the thing. Some people look at the earth as just matters, but it's full of meaning and life and is sacred."

Shirley Williams, who is part Ojibwa and a professor of native language and culture at Trent Uni-

versity, says the site has always been known by a very few native elders. In days past, as the white man came closer to the site, she says, the carvings were hidden from view. "They covered the rocks because of the encroachment of missionaries, who would prevent them from practicing their cultural ways. They agreed that nobody should be talking about where the sacred places were."

The site, according to the Vastokases, is the single largest concentration of rock carvings in Canada. But other petroglyph sites have been found from coast to coast, and two even have been discovered in the Canadian Arctic. One, at Quaratalk in the Joy Bay region of the Ungava Peninsula of northern Quebec, includes a collection of 44 human faces and is thought to be the work of artists of the prehistoric Dorset culture. Another outstanding site is to be found on the sandstone bluffs of Writing-on-Stone provincial park in southern Alberta. This site, like the Peterborough one, is seen by native people as a place where the spirits live, but unlike the teaching rocks in Ontario, the western petroglyphs, carved by the Shoshoni and Blackfoot, among other nations, record such things as the coming of the white man to the West and the conflict and battles that came with him.

The first petroglyphs and pictographs (rock paintings done with the finger in red ochre) are among the earliest art forms in human history and may well have appeared in Canada some 20,000 years ago, along with the migrating peoples from Asia. None that old have been found here, however (it is doubtful that rock carvings or pictures exposed to the elements could survive for such a long time). One in the area of Lake of the Woods in northeastern Ontario may be 6,700 years old, perhaps older. This petroglyph site is being investigated by Jack Steinberg, a professor of anthropology and a senior scholar at the University of Wisconsin. So far, Steinberg has uncovered a carving of a woman and other an-
nal figures that were hidden by 10 layers of soil. This is the oldest known site in Canada. Perhaps rock art in Canada is at its peak in British Columbia, both along the coast and in the interior. A well-recog- nized expert and author on rock art in British Colum- bia is John Conner, who is neither an anthropologist nor a curator, but an artist. He notes that the people of the province's official bee keeper for 32 years. More than three decades he has been recording ancient rock art, which he describes as “very abstract art. The tendency is to read a lot more into it than may have been intended.”

It is agreed, however, both by scholars and some people who see rock carvings and paintings are associated with shamans—still practiced today but existing long before the world's major religions. One scholar has described shamans as a "technique of escape" and shamans, both male and female, as powerful spirit helpers who have access to unseen powers that can be used for the benefit of the community. The site to the southeast of Labrador has been revered as a sacred place by the people of the Ojibwa Anishinaabe nation, who call it Kinngitagawangkoo, meaning "the place of power." And aboriginal people still visit the site, as others would visit churches, temples, or mosques, to experience and celebrate the spirituality that inhabits it and to bring traditional spiritual energies, such as offerings to the manitous or spirits. It was thought that some was a place that young men would go, perhaps under the supervision of a shaman, on a vision quest, fasting in isolation to seek the supernatural help of a guardian spirit, usually an animal, fish, or snake, whose form he or she could assume, perhaps both would then move into the rock. Such figures are in plenty on the teaching rocks. The Vastokases believe that manitous represent man's relationship with the supernatural.

In their book, the Vastokases write: "The Algongianks, the map uncovered in agreement with meaning, with power, with manitous. Manitous was the vital force, spirit, or energy in all things, both natural and supernatural. It formed the essence of trees, plants, the sun, bodies of water, stones, and all forms of life. It could thunder, lightning, wind, and rain. This world view, however, made little distinction or separation between 'natural' and 'spiritual', nature itself be- ing sacred and thus spiritual in meaning."

"Although Manitous existed in all things, it was not uni- formly distributed throughout the universe; certain ob- jects, persons, forces, or manifestations were more powerfully charged with mani- tous and, hence, were more sacred. Kitchi- Manitous, or Great Spirit, for example, was the most power- ful and the most sacred of all, having little to do with everyday human affairs. Kitchi- Manitous was also present in the world of sea- less, remote, and incomprehensible. It owned and controlled the workings of the universe itself and was most often manifested as the sun. Manitous, however, was not always visible in the physical aspects of nature; certain disembodied spirit beings such as the trickster Nanabush derived solely from the world of the imagination. They were also manitous, many of them capable of transformation into animals, plants, or mountains. They were also often depicted as potentially beneficent or malevolent, their power capable of being both good and evil.

The most significant carving at the Peterson site is thought to be a depiction of Kitchi-Manitous, the Great Spirit, which in aboriginal belief does not have a constant shape or form and makes the sun its home. On top of the full-bodied figure, at the end of a long rock, are two concentric circles in a plane of a head, the outer one carved with the sun's rays emanating from it. What is striking is the universal nature of the figure, which can be found in rock carvings throughout North America and as far away as Siberia and Hawaii. The concentric circles even have a similarity to the iconography of the halo in Christian art.

Another carving is of a shaman holding what appears to be a rattle, which he or she may have used in ceremonies to exercise evil spirits. A cone-shaped object over the shaman's head appears to be a headdress, and it may well be dress that was unique to shamans. The Algongianks also left an image of Nanabush, which can appear in any form it wishes but is portrayed as a rabbit. Nanabush runs a continuous battle with the under- world on behalf of mankind. "But Nanabush is also a trick- ster, deceiving and playing pranks on men, even introducing sickness and death among men," says Joan Vastokas. "The variable and fickle personality of Nanabush seems to indicate his role as an embodiment of fate, imposing itself willi-nilly upon poor, helpless humans.

An image common to many North American aboriginal mythologies is the Thunderbird, which is often described as a super-ego among Algongian peoples, who thought it could transform itself into a man. Young men longing to have the Thunderbird as their guardian spirit because it was mankind's protector against his terrible enemy, the Great Horned Serpent of the underworld. The Algongiank- s, as well as other aboriginal peoples, believed the Thun- derbird could cause lightning by flashing its eyes, thunder by beating its wings and wind by flying swiftly.

One of the most striking carvings at the teaching rocks is of a one-and-a-half-metre-long bird, either a crane or crane, but more likely a crane at this sacred place. The crane was perceived to have a peculiar and benign influence, and in the world shamans and birds of prey, such as eagles or hawks, have special significance as recepta- cles for the souls of the dead and are symbols of freedom and immortality.

The Peterson petroglyphs include at least 29 snake images. The Algongianks made full use of the natural crevices, the openings to the underworld, from where many of the snakes have slithered into the light. In one way the Algongianks appear to have considered the snake a symbol of danger and darkness, but in another they saw the reptile as having the power of regeneration and life. It would appear that the Algongianks view of the serpent is shared in mythologies throughout the world.

One of the most important of Algongian manitous is the turtle, which remains to this day a sacred creature among the Ojibwa. How sacred is explained by Henry Row, schoolcraft, an Indian agent for the U.S. government, who married and lived among the Ojibwa from 1842 to 1888 and wrote a nine-volume study on the aboriginal nations. He wrote that the turtle, "in great esteem in all Indian reminiscence . . . is believed to be, in all cases, a symbol of the earth, and addressed as a mother." In all, the turtles are carved into the rocks; some have what appear to be eggs near them, which symbolize the fertility of the mothers.

Pertinent sexuality are an essential part of the rock carvings at the Peterson site. "There's a lot of sex in this site," says Joan Vastokas, "animal fer- tility and human fertility." In their ex- haustive study of the petroglyphs, the Vastokases found seven renderings of vaginas, which are similar to other depictions in North America, Siberia, Norway and France. Even more significan- t, the Vastokases write, is the fact that "the site itself may be symbolic of the womb, an interpre- tation not inconsistent with the multiple layers of significance attached to it as the cen- tre or navel of the world and as a route to the underworld." Nor is the site without phallic symbols—two of them de- pict symbolic copulation. "The female images at the site might be interpreted as materializations of the manitous or spirits of nature," the Vastokases write, "and the male figures as representations of shamans in their capacity as phallic creatures.

The most intriguing of the Peterson petroglyphs are 14 canoes or boats, which don't seem to resemble any Al- gongian or, for that matter, North American vessels. In fact, the boats appear more Viking than anything else and alien to this place. Shirley Williams explains that the boats were created in the visions of shamans, who then carved them into rock. And Joan Vastokas adds that in shamanis- tic ideology the boat is often an imaginary vehicle for the shaman to pud his way "beyond the cosmic sea in search of souls that have left the body."

It is not known why the Algongianks stopped carving the rock of this holy place. Lisa Roach, a guide at the site and a postgraduate student in anthropology at Trent University, speculates that the carvings stopped around 1400 because other natives moved into the area.

Another guide, Arthur Horn, a Kainai from Alberta who has also served as a guide at this year completed postgraduate work in anthropology and native studies at Trent, has a different explanation. "Maybe the site had become too crowded," he says. "Sometimes sites would be used to a certain point and then left alone, closed off. What is important is that the rock is now treated as an active spiritual site by native people.

Overall, Roach is wisely cautious about the meaning of some carvings. "We sometimes tell people that the only person who really knows what each carving means is the person who made it. What is being said now is based on information we have or from people doing the best they can to tell us what they mean, but only the people who know for sure are the ones who made them."

And, says Horn, "it's nice not to know, because if you make your own dreams, it makes you think."
Dennis Love, general manager of mining for Syncrude Canada Ltd., tells the story: "This young native man — he was in his late teens or early twenties — stood up and said to the people of his own community, 'This is the first time I've ever felt I've achieved anything. I've gone from contemplating suicide to having pride in myself. And I credit it to this job.'"

"This job" is with DMJ Enterprises, a native-owned company that operates wash bays at Syncrude's oil sands plant near Fort McMurray in northeastern Alberta. The occasion for the young man’s本着 words was a dinner organized by Syncrude to honour employee achievement. The place was Janvier, a native community in wooded country 140 kilometers southeast of Fort McMurray. The young man was making an acceptance speech for an award he received for his excellent safety and attendance record.

The rest of Love’s story is about someone else — about the 28-year-old woman who runs DMJ and who gave the young man his chance. Her name is Doreen Janvier (DMJ are her initials), and her firm has a two-year contract to supply labour to Syncrude’s mine wash bays. Janvier recruited her work crew — which now numbers 18 — from the people of her home community. Few of them had ever worked full-time before. Their mission: to operate three highly sophisticated wash bays used to clean mining equipment that has become tar splattered and mud encrusted in the world’s largest open-pit mine.

Previously, Janvier had worked as a Syncrude employee in the wash bays, where her competence caught management’s eye. Says Mike Mullin, then a mine supervisor: "I challenged her to become an entrepreneur in her own right." Today Janvier laughs confidently and looks to new horizons. "This," she says, "has changed my life. I went from washer to manager in a matter of months." But her business venture was scary at first. She had to stake $10,000 of her own savings to get started. Then, having discovered that it’s customary for 90 days to elapse before Syncrude pays its accounts and not wanting to ask for any favours, she had to borrow $30,000 to meet her first three payrolls.

For collateral she posted all she owned — a trailer home, a truck and a snowmobile.

How does it feel being a successful contractor? "I love it, now that I’m out of the financial danger zone," she says. "My loan has been repaid — my truck, trailer and Sno-Go are mine again. We can even afford to hire a secretary." Janvier’s next goal is to complete a five-year plan for DMJ and bid on an interesting labour contract coming up later this year; up to a dozen labour positions may be available in the plant, she has heard.

The DMJ employees are among the approximately 150 native Canadians who work for aboriginal and nonaboriginal contractors on the Syncrude site plus the nearly 300 who work full-time for the company as permanent staff members. This makes Syncrude, which produces 11 percent of Canada’s crude oil and is one-quarter owned by Imperial Oil, the largest private-sector employer of native Canadians in Canada. Syncrude’s goal is an employee population representative of the region, which is roughly 10 percent native Canadian. That target hasn’t been reached yet, but there has been measurable progress as more native youths, men and women complete high school and eye industrial careers in their home region.

Completing high school when you live in a small native community, however, can be a daunting task. Few native communities have high schools. Doreen Janvier had to leave home at 13 to go to Fort McMurray to begin grade 9. She boarded in a private home. "I almost quit," she recalls. "You have to be a strong person to live in a stranger’s house as a young teenager."

But, she adds, "If you have the determination you can get an education." (Syncrude began insisting that new employees have grade 12 in the late eighties.)

Jim Carberry is Syncrude’s native development adviser but often seems as much adviser to the aboriginal community as he is to the company. To both he passionately extols the importance of individual responsibility and independence. To both he declares a horror of dead-end jobs, maintaining that such jobs are profoundly harmful to individual development. To the aboriginal community he counsels on the importance of education, however daunting. To Syncrude he counsels on the need to support native education, at whatever level. To both he preaches the worth of meaningful employment opportunities.

Carberry is a straight talker. "Jim certainly knows how to say no," aver Sara Cardinal, a pipeline construction contractor who regularly drops by Carberry’s office. Cardinal is
Fort McMurray’s Entrepreneur of the Year, but there is little call for his line of business these days. He reminds Carberry that he is the only aboriginal-owned business currently without a contract with Syncrude. He now clearly likes to land some work. “At one time he had nearly 100 employees—85 percent native Canadian,” Cardinal says with pride. Now he’s down to a handful. Carberry, who encouraged formation of Cardinal’s company, Northern Crude Contracting Ltd., lends a sympathetic but noncommittal ear. After all, not even corporate advisers can do a lot about business slumps.

“Jim gives sound advice,” says Cardinal. “He gives the truth.” With a rueful laugh, he quips, “He understands us.” Cardinal’s esteem for Carberry is shared by others. The Cree and Chipewyan bands at Fort Chipewyan have made Carberry their honorary chiefakin, Denke Kawechatah (“He who helps”), and the people of Fort McMurray have elected him to their municipal council—this past spring, he was acting mayor.

Carberry deflects questions about stereotypes of aboriginal workers at Dennis Love. “Our experience is that the stereotypes are just plain wrong.” Love has responded, “I’m not being patronizing, I’m being factual when I say aboriginal employees work safer, practice teamwork more consistently and have superior attendance. Year after year we go to Fort Chipewyan to present plaques for high performance in attendance, safety and the like. Year after year, the Fort Chip group is accident-free. Our native employees have contributed a tremendous amount to the company.”

Doreen Janvier picks up the story from her perspective.

“Regular employment means self-esteem is up and relationships improve. Homes can be upgraded out of earnings, not welfare, and vehicles can be acquired. It’s independence. I see people growing when they’re working. They feel great. There’s a big change in them.”

She concedes there’s also “a sad part.” Sometimes when she goes home, she says, she’s confronted with litigations of sorrow from people who lack education and marketable job skills and who are dependent on welfare. She sees a pattern where “people get into a deep depression, into a rut, and they feel it would change if only they could get a break.” She’s also aware of resentment and jealousy when some appear to be prospering and some are not.

Not everyone, however, wants a year-round job. The seven men and two women in the oil containment and recovery (OCAR) team, who contract with Syncrude to spend summers skimming oil off the company’s tailings settling basin, are busy elsewhere in the winter. Some are hunting and fishing. Some, like Ernestine Herman, stay home with their children. The settling basin where the OCAR’s work is a storage area for waste resulting from the extraction process. It stores process water, spent sand and a lingering trace of heavy crude oil. Three or four boats, each operated by a captain and two deckhands, spend the day transporting oil slicks and driving them to shore to be salvaged.

The area manager of OCAR asked Mabel Laviollette to serve as acting supervisor. She is a mother of four who has relocated from Fort Chipewyan to Fort McMurray. “Our salaries are excellent,” says Laviollette, “and we qualify for company benefits.” Most have been on the team for several years; it is Laviollette’s sixth season. As acting supervisor, Laviollette serves as a liaison between the group and the area manager for OCAR, provides support to the team, manages the schedule and keeps the books. Says Laviollette: “For most of us, it’s the best of both worlds. It’s like having a business of our own plus all the benefits of working for a large corporation. Where are you going to get it better than that?”

But business also demands painful decisions, and Laviollette has just been confronted with one. Syncrude has offered her a promotion—a permanent supervisor. But it’s a full-time job, and it would mean she wouldn’t be able to devote herself solely to her children during the winter. She treasures the six months she spends with them at her property at Fort Chipewyan, and as a single mother is apprehensive about a life style that would require her to spend substantial less time with her children.

Yet the appeal of promotion is undeniable. Life has not been easy for Laviollette. 42. Candidly she says, “I have been through a lot.” She was born in Fort Chipewyan into a Metis family—a minority group in a native community. The local school only went to grade 9. After that, “it was really hard to get an education.” Living in a dormitory, she began high school in Grouard, in Alberta’s Peace River Country, but didn’t finish grade 11. Even now she is working on grade 12—she has just two subjects left to complete. Back at Fort Chipewyan, lucrative work was done. She persevered with her applications. Finally, construction of Syncrude got under way. Finally, she got a construction job with Bechtel Corporation, the major contractor. Along the way she had her children and suffered a severe illness. In 1987 she joined Syncrude’s OCAR team. Every summer since, she has worked on a boat on the tailings settling basin. Team members are friends. “This gets in your blood, and I look forward to it every year.” Despite the difficulties that would come with a promotion, Laviollette is glad to have been offered the position of supervisor.

Meanwhile, Jacques Couture, equipment trainer, talks of OCAR’s cohesiveness and camaraderie. “Everybody on the team gets a chance to discuss the work and contribute to decision-making,” he says admiringly. “But it’s more than that—there’s a tremendous sense of trust and mutual support among the members.” He is not alone in respecting aboriginal workers’ flair for teamwork.

Syncrude was a Canadian pioneer in adopting the team concept as a management style. The Syncrude Story, a 118-page book that relates the company’s history in employees’ own words, says, “... the team concept has been the lubricant that’s kept the organization rolling over some of the roughest industries ever encountered.”

The team concept, says Eric Newell, Syncrude’s president and chief executive officer, “requires employees to think and act like owners of the business. Team leaders were told to ensure that everyone’s ideas were listened to and taken into consideration in reaching decisions.”

YEAR AFTER

WE PRESENT PLAQUES FOR

HIGH PERFORMANCE. OUR

NATIVE EMPLOYEES HAVE

CONTRIBUTED A TREMENDOUS

AMOUNT TO THE COMPANY”

Mabel Laviollette: leading an oil containment and recovery team.
For native Canadians working with Syncrude, adopting the team concept was relatively easy. “Their traditional social structure functions very much along the lines of the team concept,” says News. “People have long worked together in groups beyond the family unit. People in native communities do tend to pull together to help one another. Syncrude has learnt a lot from their example.” Canadians may attribute the notion of teamwork to Japanese managerial wizardry, Dennis Love very observes, “but aboriginal people were thinking Japanese long before management styles were given names.”

Yet another example of the excellence of native employee teamwork is the mine rescue team, a highly trained cadre of about 36, divided into four units. One is led by Dave Flews, 26, from Gregoire Lake. Three members of his team (including him) are native Canadian. Members hold full-time jobs (Flews is a member of a three-man crew on a dragline) as well as their emergency rescue positions. They study and practice mine rescue on their own time, scheduling at least 200 hours of training and upgrading a year.

It’s the teamwork that Flews savours the most. Communication—virtually reading one another’s minds and bodies—is imperative, he says. “It’s a much more intense experience than ordinary work, since many lives can be at stake in a mining accident.”

Born in Northern Ireland, Jim Carbery came to northern Canada as a teacher, eventually becoming assistant superintendent of schools for Fort McMurray. By 1977 Syncrude was asking him to assist with a native development plan. Two years later, he joined Syncrude full-time. Carbery talks of an undercurrent of complaint about reverse discrimination among non-native employees. Customarily mellow, he bristles. “Look at the workforce,” he says shortly. “It’s still more than 90 percent non-native. That doesn’t match our demographics.”

The greening of Syncrude—healing the scars of mining—is opening another chapter in local job and business opportunities. This spring, for instance, 250,000 tree seedlings were grown under contract by the Fort McKay Environmental Services Company, a hand-owned company employing about seven people. The seedlings were grown in Syncrude greenhouses, themselves staffed in part by native Canadians.

Martin Fung is part of a team at Syncrude charged with finding effective ways to reclaim land. He describes the contract with the Fort McKay band as partially an investment. In the past, Syncrude ran the program, growing the seedlings itself and hiring people to plant them. Now the objective is to put responsibility on contractors. Another company, Athabasca Native Employment, is involved in planting the seedlings. While Fung felt Athabasca’s bid was “fairly high,” he sees it including the cost of learning. He expects Syncrude to benefit in the future by way of having secured experienced, dependable contractors located in the Fort McMurray region. (Looking down the road, Fung sees more local opportunities when other members of the environmental division will try developing pastures on reclaimed land, with an eye to bison ranching.)

Bill Enge, who has spent most of his working life in the Canadian North, primarily in the purchasing and supply field, is now Syncrude’s business development coordinator with responsibility for contracts. He remembers when there were no native-owned contracting companies. “Now,” he says, “there are probably about 20.” Last year Syncrude purchased goods and services worth an estimated $20 million from aboriginal-owned companies.

Enge points to the Fort McKay Transportation Co. Aboriginal-owned, the company is in the fourth year of a five-year contract to provide dial-a-bus service on the Syncrude work site. As the name suggests, a phone call summons a bus in moments. Sears are on site during the workday. Three more provide hourly service into Fort McMurray, about 60 kilometres away. The five-year contract enabled the Fort McKay band to finance purchase of the buses.

Keyano College in Fort McMurray, trains the drivers—most of whom are women.

“COMMUNITY DEVELOPMENT ISN’T MEASURED BY WHAT PEOPLE LIKE ME DO BUT BY WHAT THE PEOPLE IN THE COMMUNITY DO FOR THEMSELVES”

Clearwater Welding and Fabricating Ltd. is one of the biggest participants in both Syncrude and the aboriginal communities. Native owned, the company’s hiring policy dictates that at least 50 percent of its staff must be native. Clearwater does close to $1 million of business a month with Syncrude. The company has a total of about 175 employees working at the Syncrude mine site and in its plant in Fort McMurray.

Clearwater’s founder and manager is Doug Golosky, 42—a native from Fort McMurray—for whom praise is unceasing among business colleagues. He was born in Fort McMurray, half a block from his plant. The family-run company has won a host of laurels. One of which he’s particularly proud is the 1990 Native Company of the Year for the three Prairie provinces, a distinction conferred by business, industry and government.

The company, formed in 1984 with one welding rig, has expanded to include a trucking operation, a fabricating shop and a separate machine shop. It has held welding and fabricating contracts for most major companies in the region, but Golosky single out Syncrude for special credits for business patronage and information sharing.

Methodically, Golosky runs through his system for training employees, all of whom must have completed grade 12. Like Syncrude, Golosky’s company works with communities to encourage young people to complete high school.

Employees start as helpers in the shop or field, are monitored and, if they show aptitude, are moved into an apprentice program within three months. One of the keys to employees’ success, says Golosky, is that “they must feel they are being treated fairly.” He’s seen about 100 journeymen get their papers, including pipelinefitters, welders, millwrights and crane operators. Clearwater is a major supplier of skilled tradesmen to Syncrude, especially the mine operation. Two women “graduates” of Clearwater are currently Syncrude foremen, he notes with some pride. What does Syncrude do to ensure the aboriginal community gets a fair share of the benefits from a highly technical resource extraction industry? Representatives from corporate...
Jim Carbery, Synucid's adviser for native development: preaching the word of meaningful job opportunities.

In closing

The armchair sailor

S
ome people are train spotters; others are plane spotters, and I used to be a
ardent one in my youth. Eventually, I've taken up an equally enjoyable but even
less demanding hobby: I've become a ship spotter.

The requirements for this fascinating pastime are minimal. It helps to have
clear eyes, a good body of work, and a lot of determination. Synucid agrees that initially the new company will be its sole supplier, with clear conditions. But everyone is
told that down the road they'll be expected to bid on business just like any other business.

Synucid's employment philosophy extends to nonab

tions throughout North America to find Fort McMurray to find out.

Framing the answer, Carbery—ever the teacher—
strides over to a blackboard. First, he talks about the ab
ing community in the region: Fort Chipewyan, 93
kilometers to the north of Fort McMurray, is the largest,
with about 1,500 residents; Fort McKay, closer in, has
about 400 residents; to the south of Fort McMurray, Ore
goose Lake has 197 residents; Anzac has 350; Janvier
450; and Conklin, 150 kilometers to the south, about 200.
Fort McMurray itself has 35,000, including about 2,000 na
tive residents.

Among the regional coordinating bodies for employment
is one known as the Community Futures Board; Carbery is a
member. He also works with the government-financed Atabasca Native Development Corporation, whose mem
bership includes the chiefs of five bands and Metis leaders.

He recalls that in the beginning Synucid's licence to
operate required it to provide employment and business
opportunities for members of the aboriginal population. The Aba
basca oil sands region was, after all, their area, and many
were suffering heart-rending poverty. To comply, says Car
bery, the company relies on three major activities: employ
ment and training; community development; and business
development.

Carbery tells you how people are encouraged to com
plete high school and to go on to Native College (which custom designs training programs) or Alberta's technical
institutes or universities. Encouragement ranges from ca
res in the schools to workshops to training pro
grammes sponsored in the communities to scholarships for
individuals to recruitment bonanzas for employers in their
home communities.

"One benefit is that for aboriginal people to contribute,
industry must provide meaningful job opportunities for
them—the emphasis is on meaningful. Not just mental
jobs; not just desk-end jobs. If a company just provides
desk jobs, it is creating a ghetto within itself." Ten
percent is always quoted as Synucid's target for aboriginal
employment, he notes, but more precisely, the goal is "a
workforce that's representative of the region."

In any event, Synucid's current permanent workforce
of 4,300, nearly 290 currently are aboriginal (6.6 percent).
"That figure could be more but all the additional employees
would have to be in the mine, and it would become a
ghetto." (Essentially Synucid has three parts: the mine,
from which the oil sand is recovered; an extraction unit,
in which sand and oil are separated; and an upgrade, which
converts heavy oil into a bitumen or synthetic crude oil.

"Then, too," says Carbery, "there are competing priori
ties—advancement of women and disadvantaged people,
for instance, simultaneously there is economic pres
sure to reduce costs."

As for community development, the assertive Carbery
sur
faces again. "If there is anything on which we want to be
quoted, it is this," he declares, watching to see that it's being
quoted down. "Community development isn't measured by
what people like me do but by what the people in the com
munity do for themselves. If I do things for people, I keep
them dependent. In that case, I'm not really helping them."
He continues: "The corporation must also be chal
lenged. It must ask itself, 'Are you walking the way you
are telling or is what you're doing just tokenism?' It must
ask itself, 'Is this behaviour consistent with the values the
company is espousing?" Carbery turns to opportunities
for natives in their own companies, the third pillar of
Synucid's aboriginal policy. "The idea of business de
velopment is not that we're going to hire aboriginal people.
A contract is prepared, with emphasis on hiring and training.
Synucid helps with tuition, books and accommodation
costs. Synucid agrees that initially the new company will be
its sole supplier, with clear conditions. But everyone is
told that down the road they'll be expected to bid on business just like any other business.

Synucid's employment philosophy extends to nonab

ginal communities as well, Carbery explains. Indeed, he notes
dryly, it isn't unknown for a company to lose out on a bid
simply because of failure to seek out, hire and train aborigi
nal employees.

Putting away his chalk, Carbery says his dream is what he
calls "normal process," where the sole basis for hire
ning and contracting at a colour-blind Synucid would be
competence. "I'm certain it will happen. I'd like to think
future generations here would be astonished at there
being ever a necessity for a job like mine." He excuses him
self. He has promised to go for coffee with an anxious
aboriginal entrepreneur whose business isn't going quite the way it should.\n
Jim Carbery, Synucid's adviser for native development: preaching the word of meaningful job opportunities.

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